

Warm Up in Breaking

A semi-structured interview

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Bachelor's thesis

May 2016

Social, Health and Sport

Degree Programme in Physiotherapy

Author(s) Pulkkinen Matti	Type of publication Bachelor's thesis	Date May 2016
		Language of publication: English
	Number of pages 34	Permission for web publication: yes
Title of publication Warm-Up in Breaking A semi-structured interview		
Degree programme Physiotherapy		
Supervisor(s) Häyrynen Teija, Kantanen Mari		
Assigned by -		
<p>Abstract</p> <p>Breaking (known also by b-boying or break dancing) started in the early 1970 's on the streets of the Bronx in the city of New York. Breaking, as well the whole hip-hop culture, was created by young children and teenagers. During the years breaking has developed so that it is impossible to ignore the sport side of it. The foundation is still the same, but in terms of moves it has risen many levels higher compared to the early days. However, the level of knowledge related to training is still quite limited.</p> <p>The aim of this study was to offer basic information as well as instructions for proper warm-up for breakers. The objective was to develop breaking by preventing injuries and increasing the overall health of breakers. The study was implemented by interviewing one expert who had experience of both breaking and physical coaching. The interview method was a semi-structured interview. The theoretical framework for the study focused on dance injuries and warm-up in sport in general. The data from the interview was analysed by using content analysis.</p> <p>Based on the interview, warm-ups can be much more than what dancers might think. Warm-up is an essential part of the training, and it has many benefits. By warming up it is possible to scan the body in order to find injuries and increase confidence in that everything is working. With a plan it is also possible to learn new moves in a warm-up. Warm-up is a transition to the actual training.</p> <p>Breaking and dancing in general include injuries, but one way of preventing injuries is proper warm-up. Dancers should be aware of the benefits of warming up, so that they are motivated to use it. The key is to find personal ways to do it. Warm-up for breaking has similarities with the theory, and it is easy to use by the breakers. Since only one expert was interviewed, generalization of the results was not possible.</p>		
Keywords/tags (subjects) Warm Up, Breaking, Interview		
Miscellaneous		

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1 Introduction

The purpose of this study was to offer basic information and instructions for proper warm-up exercises for b-boys and b-girls (break-boys and break girls, from here on: breakers). The goal was to develop breaking by preventing injuries and increasing the overall health of breakers. The study was implemented by conducting a semi-structured interview with one respondent. Dance injuries and warm up formed the theory framework.

Breaking started in the early 1970 's on the streets of the Bronx, New York City. Breaking, as well the whole hip Hop culture, was created by young children and teenagers. During the years breaking has developed so that it is impossible to ignore the sport side of it. The foundation is still the same, but in terms of moves it has risen many levels higher when compared to the early days. In the beginning, breaking was something that the dancers learned by doing and imitating their friends. Today there is an option to start breaking in classes, but breakers are still highly self-taught. The foundation is usually learned in the classes with a teacher, but after that one starts training by oneself and with one's friends. With this scenario there might be a lack of information about efficient and safe training.

Research about breaking can be found, but it is quite limited. Breaking is still relatively young with a history of about 40 years. This is now changing, and breaking is more professional nowadays. Consequently, breakers have started to think more about how they train, and, therefore, research and information for breakers is needed. Additionally, the author wants to specialize to be a physiotherapist for breakers. This study is the beginning of that path.

About the author

My name is Matti Pulkkinen aka B-Boy MattiWatti and I represent the Joensuu BBoys Crew. I have been breaking since 2002 and teaching breaking since 2009. In the year 2015 the Joensuu BBoys won the Finnish Breaking Championships. Throughout the years I have been successful in many different jams and competitions around the

world. I have studying breaking as well as hip hop culture by participating in workshops led by over 40 different teachers. These include the main masters, legends and pioneers of breaking.

Additionally, I have been active in building the hip hop culture. I have organized jams, workshops and clubs. I have been establishing street dance and culture focused associations in Finland. Furthermore, I am one of the founders of the first Hip Hop library in Finland.

In the 2012 I began my physiotherapy studies at JAMK University of Applied Sciences. During my studies in the degree program I became interested in the idea of combining physiotherapy studies with breaking. I conducted my last internship in a dance school working with different dance styles. My plan is to combine a professional breaking career with physiotherapy, so that I can enjoy the culture by dancing and helping to keep it healthy.

2 History of breaking

Originally from Kingston, Jamaica, Clive Campbell better known as DJ Cool Herc, played his DJ debut in 1973 at his sister's birthday party in their recreation room in the west Bronx, New York. Herc had plenty of DJ performances and he noticed that people "went wild" during the "break" of the song. Herc discovered a way of having two copies of the same record in order to double the short "break" for as long as he wanted. (Light 1999, 15)

Herc called this technique of extending the short breaks with a term "merry-go-round". Herc gave the name b-boys (break-boys) to the dancers who went wild during the "Merry-go-round". These dancers included breakers, such as Tricky, Wallace Dee, Amazing Bobo, Sau Sau, Charlie Rock, Norm Rockwell, Eldorado Mike and Keith and Kevin aka the Nigger Twins. Dancing was called "bojoing" because the dancers were jumping around and spinning on the floor. (Chang 2005, 101-102)

Not long after the first b-boys started, different crews began stepping out representing their own neighborhood of the Bronx and all the other areas of New York. During 1982-1984 films like *Style Wars*, *Flashdance*, *Wild Style* and *Beat Street* spread breaking and the whole hip hop culture all over the world. (Light 1999, 56-57)

Many becoming b-boys in Finland saw breaking for the first time in the film *Flashdance* in 1983. In the fall of 1984 Charles Salter from the US started to teach breaking in Helsinki, Finland. (Tuittu & Isomursu 2005, 22) Around same time Mikko Algren and Michael Geppert started to teach breaking in the middle and eastern parts of Finland. (Hämäläinen 2013) The Finnish b-boy and Hip-Hop culture practically flourished during 1986-1989. The nineties were a silent time for the Finnish breaking, but a new wave began in 1997 when the students of the first break teachers started to pass their knowledge on. One of them was b-boy Hypnotic who travelled to New York in 1997. The trip gave a great deal of new inspiration, and he started giving breaking classes again in Helsinki, Finland. (Tuittu & Isomursu 2005, 22)

In the year 1998 DJ Jason Nevin made a remix from the song *It's Like That* by RUN-DMC. The music video of the song had breaking in it, and because of it the popularity of breaking exploded around the world including Finland. Bmfunk MC's hit *Free-styler* was another big inspiration for breakers in 1999. (Tuittu & Isomursu 2005, 28) In the year 2014 there were 14 breaking crews, 60 persons in the solos and about 30 young dancers competing in the Break SM (Finnish Breaking Championship) (Sirviö 2014)



Figure 1. B-girl Crazy Granma doing a head freeze. (Joensuu Get Down 2015) Photo: Samuli Ronkanen

3 Common dance injuries

3.1 Back

Back injuries' incidence is high in athletics because of involving loading and high compression forces, forceful twists and activities involving spinal hyperextension. Dancing contains all of these factors, and back problems are often common in dancers. Different studies presents that the prevalence of back injuries varies from 45% to 80% in dancers representing different dance styles. It is important to take into account that back injuries require a long time off from dancing. Back injuries can cause even a full year break from dancing. (Clippinger 2007, 147)

Because of the high incidence of back injuries and the possibility of them leading to more serious injury, dancers should take aggressive measures to prevent back injuries. The risk of injuries can be decreased by being warmed up properly, focusing on

correct abdominal stabilization and spinal alignment, developing core strength and developing spinal, hip and shoulder mobility. (Clippinger 2007, 149)

3.2 Knee, ankle and foot

The knee joint is vulnerable to valgus and varus stress causing injuries of the ligaments and menisci. The knee joint is located between the longest bones of the body with shallow articulation. Injury of risk is increased by the rotation allowed at the knee when it is flexed. With a combination of general vulnerability and high stress from jumping, floor work and repetitive flexion, knee injuries are common in dancers. Surveys show that 15% to 20 % of ballet and modern dancers have had a knee injury. (Clippinger 2007, 283-284)

Knee injuries can be avoided with the proper strength of the quadriceps muscles and mobility of the quadriceps and hamstring muscles. Another factor is the technique. This means avoiding excessive foot pronation, overusing the quadriceps and letting knees “fall in”. (Clippinger 2007, 284,286)

The ankle and foot must endure great forces. During walking the ankle joint will face 5 times the body weight, and from 9 to 13 times the body weight during running. The ankle-foot complex is the most common site of injuries in dancing. Studies show that up to 45% of the injuries are in the ankle-foot complex. The studies included modern, ballet, tap and flamenco dancers, so despite the demands of the varied dance forms, injuries of the ankle-foot complex have a high incidence in dancing. Injury prevention in the ankle-foot complex includes avoiding abrupt increases of dance training by maintaining condition during breaks, supplemental exercise for the ankle-foot, daily stretching of the ankle-foot for mobility, avoiding the foot’s excessive inversion or pronation, careful selection of the shoes, using floors with good resiliency and friction. (Clippinger 2007, 359-360)

3.3 Upper extremity

Upper extremity injuries are less common in dance generally. The reason for this is the fact that dancing is primarily weight bearing with the lower extremities. Breaking

is an exception because of having a high incidence of upper extremity injuries. A study shows that breakers have 23% of the total injuries in the hand, 7.5% in the wrist and about 9 % in the shoulder. (Clippinger 2007, 359-360)

Upper extremity injuries are related to the dancers performing repetitive overhead movements or demanding movements including supporting the dancer's body weight or other dancer. Injuries can occur when the related forces exceed the passive mobility and dynamic control of the shoulder joint. Injury prevention includes developing adequate and balanced strength, mobility, warming up properly, avoiding fatigue and focusing on good technique. Supplemental strength training three times per week can build strength, making injuries less likely. Joint stability can be developed by training the rotator cuff and scapular muscles. Finally, shoulder stress can be reduced with proper arm placement and scapulohumeral rhythm. (Clippinger 2007, 452)

3.4 Common injuries in breaking

Breaking can still be regarded as a popular sport in Europe, Asia and America, even though the peak of the popularity was in the 1980's. Despite the popularity of the sport, there are only 26 case reports or letters to the editor dealing with breaking related injuries. (Kauther, Wedemeyer, Wegner, Kauther, & Knoch, 2009)

The spine, knee, skin, shoulder and wrist/hand are the most common regions for injuries in breaking. Ankle/foot injuries are on the sixth place. Amateurs have injuries most commonly in the spine, knee, shoulder, skin and ankle in a declining order. The most common injuries in professional breakers are in the knee, spine, skin, wrist and ankle. The following diagram (Figure 2) describes the percentages of the most common injuries combined from amateurs and professionals. The total number of injuries was 1665 including injuries in amateurs and professionals. Most common injury sites are spine, knee, skin, shoulder, wrist/hand and ankle/foot. Data was collected by a survey from 144 breakers. (Kauther et al. 2009)

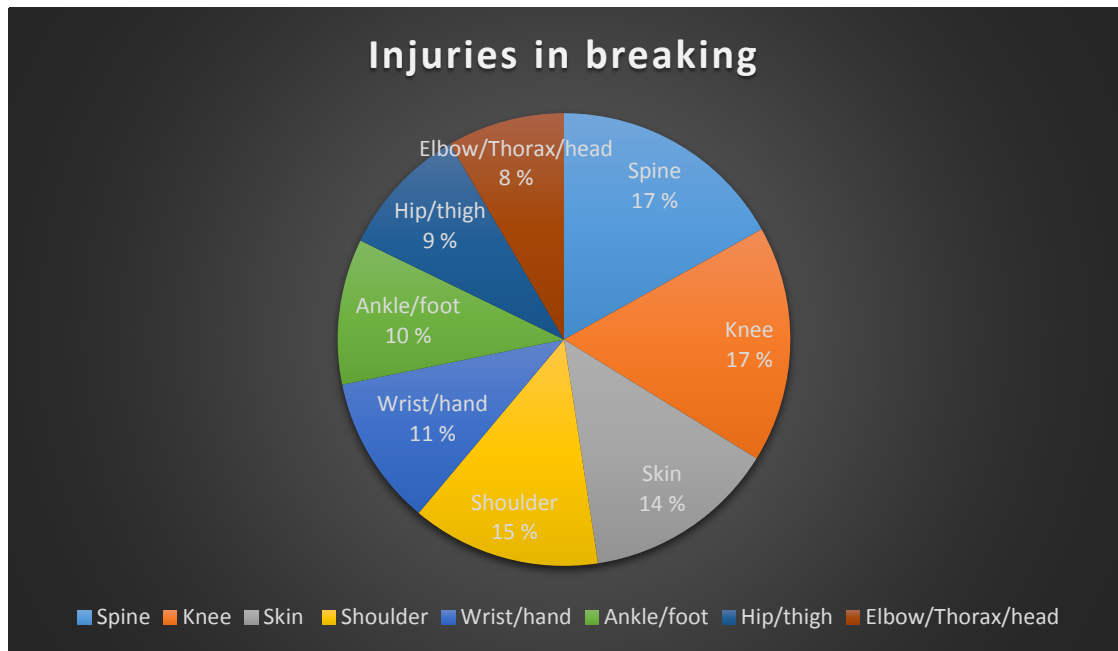


Figure 2. Injuries in breaking (Kauther et al. 2009)

According to Cho, Song, Min, Lee, Chang and Eum (2009) breakers had injuries in more than one site. The study included 42 subjects. The percentages of injury sites were: wrist (69.0%), finger (61.9%), knee (61.9%), shoulder (52.4%), lumbar spine (50.0%), elbow (42.9%), cervical spine (38.1%), ankle (38.1%), foot (28.6%) and hip (16.7%). So over half of the subjects had injuries at wrists, fingers, knees and shoulders. The most common injury types were sprain, strain and tendinitis. Additionally, 31% had fractures or dislocations. Warm up was performed by 66.7%. (Cho, Song, Min, Lee, Chang, Eum, 2009)

4 Warm-up

Warm-up refers to moves or move patterns which help to achieve the optimal physical condition for a practice session or competition. Warm-up is in a major role of decreasing the risk of injuries. (Saari, Lumio, Asmussen & Montag 2009, 3)

The purpose of warm-up is to prepare the body for increased physical activity in a practice session or competition. Warm-up increases the volume of blood flow, and the blood goes to the working muscles. The increased body heat improves the elasticity of the muscles, and the risk of injuries decreases. The warm-up begins with warming up the big muscle groups. This can be done by, for example, running or

jumping. When heartbeat increases and breathing is stronger, it is time for a more specific, sport-related warm-up. Moreover, it should include light stretching movements whose purpose is to check mobility. The time used for warm-up is individual and depends on the situation. (Mero, Nummela, Keskinen & Häkkinen 2007, 446)

Advantages of proper warm-up:

- decreases risk of injuries significantly
- prepares the body for optimal practice or a competition condition
- increases performance and recovery of the muscles
- increases ability to focus
- stress release before competition
- increases practice response

(Saari et al. 2009, 3-5)

4.1 Blood circulation and respiration

In a resting state, the blood flow of the organs is rapid, but during the warm-up they start to deliver blood to the muscles. Most of the small veins are closed, but they open because of the increased blood flow. The increased blood flow and the muscle work increase the temperature of the muscles and the whole body. This is how the muscles receive more oxygen, energy and hormones. At the same time, the muscles are eliminating waste products. Warm-up also increases the metabolism. All these factors improve the performance and recovery. Because of the muscle work during the warm-up, the respiration density and the depth increases. The goal is to have enough oxygen in the muscles and remove carbon dioxide. (Saari et al. 2009, 3)

Because of the increased body temperature, the neural impulses start moving faster. This leads to the improvement of strength and proprioceptive system, so that speed, reaction time, balance and movement efficiency become better as well. The metabolism of the brain parts that are involved with the movement will increase if there is sport-specific movement included. With the increased body temperature muscle elasticity increases. Warm-up should include a short time of functional stretching. (Saari et al. 2009, 4)

4.2 Concentration, time and temperature

Warm up enhances attention. It activates the nervous system and vision. This leads to a better coordination and precision of the motor movement. Warm-ups can also work as a preparation ritual. It can ease, for example, the stress of a competition. The venue can be a great deal different from the practice environment, but it is possible to increase concentration by focusing on a warm-up routine. The goal is to connect the blood circulation, respiration, nervous system, muscles and overall attention to each other. All these together affect the performance. The minimum duration for warm-up is 15 minutes. (Saari et al. 2009, 4)

Prior to practicing one should consider when to practice. Preferences range for mornings to afternoon and evenings used for practicing. Every athlete is an individual, and this should be respected. It is useless to have intense practice in the morning if one is used to practicing in the evenings. During sleeping the body goes to a resting mode, so one should have a longer and calmer warm-up before a morning practice. (Saari et al. 2009, 4)

Temperature and weather affect the warm-up. In a colder weather the warm-up time needs to be longer. Cold weather must be taken into account when selecting clothes and gear. In a hot weather blood circulation is vivid on the skin level, but warm-up needs to be sufficiently intense so that it also reaches the muscle level. In addition, one must pay greater attention to hydration already in the warm-up. (Saari et al. 2009, 4)

4.3 Active warm-up

Active warm-up prepares all the systems that are needed to work for a top performance. Active warm-up focuses on the kinetic chain, support from the core, stability as well as connects power, mobility, balance and coordination to each other (see Figure 3). (Saari et al. 2009, 5)

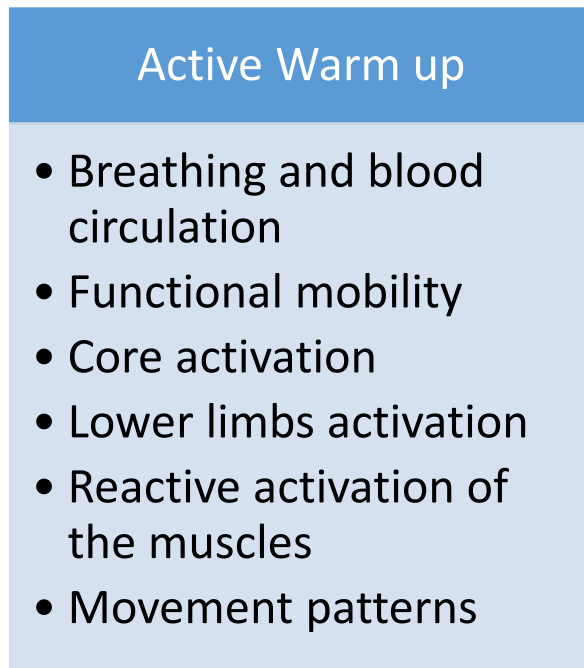


Figure 3. Active warm up (Saari et al. 2009, 5)

The goal of the first part in Figure 3 is to increase heart rate, body temperature and activate the nervous system. This part includes different jumping routines which develop coordination, so that the athlete much concentrate right from the beginning. At the same time the nervous system is activated. It is good to start the jumping routines from the easiest one. The second part is dynamic mobility. The goal is to develop the functional range of motion on different levels (front-back, sideways, around the vertical axis, rotation). The goal of the third part is to develop the activation of the core muscles. In addition, it is significant to ensure the function of the shoulder combined to the core activation.

(Saari et al. 2009, 6, 10, 15)

The fourth part is lower limbs activation. The goal is to increase the ability of the muscles to support the stance, brake the movement and produce movement power. Developing the function of the ankle is a crucial factor in motion control. Elastic energy is charged to the muscles by a pumping movement. Elastic energy is used in the fifth part: reactive activation of the muscles. The goal is to ascertain the fast muscle function. (Motoric nervous system) The sensory nervous system is activated by drills including fast shocks. The final part is complete motion where all the previous parts

are combined as one. It is important to use all the different levels. Sport-related motion is combined to this part. It can be done by including the equipment required by the sport, for example, a stick, ball etc. (Saari et al. 2009, 19, 23, 26)

The pattern remains always the same, but the following performance determines the time, intensity and quantity of each segment. The warm-up should sometimes be performed barefoot. Barefoot training gives a new challenge to the feet, ankles and the whole body because shoes give plenty of support and decrease the activation of the foot. Barefoot training challenges the overall balance and muscle work more than training with shoes. (Saari et al. 2009, 5)

5 Implementation of the study

5.1 Purpose of the thesis and research questions

The purpose of this thesis was to explain why breakers should warm up and how it should be performed. Information was collected by interviewing an expert in breaking and physical coaching. The research questions were as follows:

1. Why breakers should warm up?
2. How to perform warm up for breakers?

The framework for this thesis consisted of the history of breaking, a presentation of dance injuries and the theory of warm-up in sports.

5.2 Research methods

The method for collecting the data for the thesis was an interview. An interview differs from a general conversation in terms of the purpose of the conversation. An interview aims to collect data based on a set of previously defined goals. Data acquisition interviews can be divided in either practical interviews or research interviews. A

practical interview aims at solving a problem quickly. A research interview can also be used to solve a problem, but the information must be first scientifically summarized and confirmed. Research interviews can be separated by their level of structure. There are many different kinds of interviews, and their names might even be confusing. A structured interview forms its own category as well as all the other types of interview. These others include, for example, semi-structured interviews, in-depth interviews, focused interviews and qualitative interviews. (Hirsjärvi & Hurme 2011, 42-44)

The method in the thesis was a semi-structured interview (focused interview). A focused interview does not force the form of the research to be qualitative or quantitative. There is no strict way, form or order to the questions, which is typical for interviews where questionnaires are used. The interview runs theme by theme, and the intensity of each theme might vary. The purpose is to let the voice of each interviewee show although the themes are the same to everybody. (Hirsjärvi & Hurme 2011, 47, 48)

The questions for the focused interview used in the present study (Appendix 1) were planned so that they covered the research questions. The main questions in the interview were the same as the research questions. In addition, there were more precise questions under the main questions.

Selecting the interviewee

The number of the interviewees depends of the purpose of the research. As many interviews should be conducted as is needed for the acquisition of the data. (Hirsjärvi & Hurme 2011, 58)

I chose to interview only one person. Johannes Hattunen has a special knowledge combination of breaking and physical coaching. Johannes "Hatsolo" Hattunen is a 31-year-old b-boy and physical coach. He has been breaking since 1998 and he represents a breaking group called the Flow Mo Crew. He has been breaking all over the world successfully and he still keeps doing it. He has taken part in personal trainer

education in addition to many different kinds of coaching training. These trainings include various methods. Last year he concentrated on the Training for Warrior-method (TFW).

TFW is a supplementary training method for athletes. The concept comes from the US and it was created by Martin Rooney. Hattunen brought TFW to Finland and now he has his own TFW Helsinki gym with 500 members. Furthermore, Hattunen is one of the core team members in the Project Breakaling which has a mission to reduce injuries among breakers. According to Hattunen, there are breakers in the world with a personal trainer education, but physical coaching experience is rare among breakers.

Conducting the interview

There are many ways to ask a person to be interviewed. One is to call or send a letter where an interview is requested from him or her. The date and time for the interview can be agreed on or the interview can be conducted right away. Motivating the interviewee to the interview is important. By acting in a friendly way, politely and respectfully the interviewee will likely accept the request. This kind of persuading is appropriate especially when the interviewer is not making a profit and there will be no harm to the interviewee. In case of decline one should respect the decision. The interviewer must remember that the reason for the decline is not personal. (Hirsjärvi & Hurme 2011, 84–85)

The place for the interview depends on the research problems, resources on hand, the interviewee etc. The place for the interview can be almost anything. Usually it is the home of the interviewee, a facility/institute or public space or the workplace/school of the interviewee. The place should be calm and safe with a possibility of creating a good contact with the interviewee. The interviewer should find the best place beforehand and try to minimize all distracting factors. (Hirsjärvi & Hurme 2011, 73-74)

The interviewee of the present study agreed right away to the interview. He was first asked face to face on the 13th Feb. 2016. Later it was agreed that the interview would

be conducted at his home on the 8th April 2016. The interview was easy to perform at his home. There were no distraction factors and there was enough time to go through all the question without rush. I also explained how I am going to use the results and I got signature to permission letter. (Appendix .2)

Recording and processing the interview

Recording is essential part of the interview, so it can be performed smoothly without breaks. Interviewer should use pen and paper as little as possible so the interview can run naturally. Even the questions should be memorized beforehand. There must be permission to record and name of the interviewee need to be said in the recording. (Hirsjärvi & Hurme 2011, 92) I used recording app of my smart phone so I could concentrate only to the conversation. I made only few notes if there was for example really important section. I marked the time down so I could remember it when processing the recording. Total duration for interview was 1 hour and 22 minutes.

Transcribe from the recording can be done by writing down the interview. Transcription can be done from the whole interview or from selective parts. Another option is to make conclusions straight from the recording without writing it down first. Making the conclusions is more common when there is only few interviewee. The best person to make conclusions when transcribe is not performed is the researcher who performed the interview. Researcher knows the data so well so it is easy to pick the right themes. (Hirsjärvi & Hurme 2011, 138-142)

Analyzing the content

Content analyzing can't be done without reading the content. Content must be read several times order to make good analyze out of it. The better you know your content the better analyze you will get. In the beginning content might feel too large and difficult to handle, but it is natural. There is analyze technique where you ask simple questions. These questions include following: Who? What? When? Where? and Why? (Hirsjärvi & Hurme 2011, 143)

Semi-structured interview is easy option for categorizing the data because of the interview themes. Essential information related to research questions are picked out.

Content analysis fits well for unstructured data. The goal of content analysis is to make a summary of the data. Yet content analysis is only a method to organize the data for making conclusions. (Tuomi & Sarajärvi 2013, 93,103)

After interview I listened recordings several times. During listening I was able to pick the essential themes. I made notes from the most important part and wrote the result based on the notes. Finally I listened the interview few times to make sure I have all important themes down.

For example I asked why breakers should warm up and Hattunen answered:

“I build my warm up so that I can scan my body. After the scan I know how my body feels today and is there any injuries. “

Idea of scanning of the body was a great point and it gave a good answer for my research question so I decided bring that up in the results. Additionally idea of scanning the body was not brought out at the theory.

Advantages and disadvantages of the interview and possible mistakes

Interview is very flexible research method. It can be used for many different kinds of studies. With the interaction with the interviewee it is possible to go deep behind the questions and find out motives. In the interview subject can answer freely and it is possible to find out wide connections with many matters. At the same time interviewer has to have skills and experiment to handle the freedom of interview. Interview itself takes time with all the planning and specially transcribing is slow work. Content analyzing is problematic because there are no ready methods for it.

At this research planning and performing the interview went without any greater challenges. Minor challenge was to find out proper time for the interview because I live in another city than my interviewee. Interviewee's home was perfect and my phone did the job as a recorder device although I had some concerns of the quality of the recording. The quality of the recording was good enough and there was not any

unclear parts thanks to really calm and quite environment. I was considering making the interview by phone but I thought it is all around better to do it face to face. Afterwards I am satisfied because interview went really well without any problems.

5.3 Reliability and Validity

Terms reliability and validity are criticized in qualitative research because they comes from the quantitative research. Because of this there are other terms in use: credibility, transferability, dependability and confirmability. There is not a one right instruction for evaluate dependability of a qualitative research. (Tuomi & Sarajärvi 2013,136, 137, 140)

The reader of the research should get a clear picture how the research was made. When reader has enough knowledge about the research process, he/or she can evaluate the results. The purpose of the report is to give clear description about the subject and research process. (Tuomi & Sarajärvi 2013, 141)

The amount of the interviewees is not the main criteria in bachelor thesis. More important is how analyzing has performed. Usually the size of the data in qualitative research is small compared to quantitative research. Related to this it is crucial to gather the data from persons who have as much knowledge and experience as possible about the subject. (Tuomi & Sarajärvi 2013, 85)

I interviewed only one person. He was chosen because he has special knowledge about my research subject. There are only a few similar kind of experts in the world. With a data from only one interviewee I can't generalize my results, but generalizing is not the goal of qualitative research. In quantitative research there is method called elite sampling. Size of the sample can be small or large but only persons who are assumed to have the best knowledge are chosen. (Tuomi & Sarajärvi 2013, 85)

6 Results

6.1 Why breakers should warm-up?

Scanning and transition

Warm-up can be seen as a scanning the body. During the warm up you feel whether your body is in a good shape or is there any injuries. Is body working today better than yesterday? If the body works well at the warm up, it gives more confidence to the practice. On the other hand, you might notice tiredness. All this information will tell you what you should and what you should not do during the practice. Reacting to these messages is crucial in avoiding oversteering of the body which leads to injuries. Warm-up is a wake up for the body to be ready for the training including rise of body temperature, increasing heart rate and activating your nervous system.

Additionally warming-up is a transition to the actual practice. Warm-up and practice should not be totally different parts. Warm-up begins the process of learning and you can learn new things already at the warm-up. Inside of the warm up you can develop speed, strength and coordination. By developing your overall physical condition in your warm up it is less likely to suffer from injuries. Dancers might not do any physical training in addition to dance training so it is good to have it in your warm up. When dancer warm up regularly, the body will adapt to it so you don't need to stress about it at competitions. Body will warm up faster and you are ready to start dancing at the competitions with a short warm-up or without any warm up at all.

Breakers generally might warm-up enough if you only consider the duration. Duration does not say anything, though. Often warm up is not an effective part of the practice where you learn new moves. Breakers might use the same pattern for warm up for years and they do not update it enough often. Breakers might have practice sessions where the whole practice is kind of warm up including sitting and stretching on the sides and trying something on the middle.

Approach and motivation

Breaker can choose his or her own approach to breaking and warm-up. One can choose more sport related way or stay more close to breaking. Approach can also vary depend on situation. There might be one warm up routine for practice sessions and another for jams and competitions. The environment and situation might be totally different between training at the gym and the on venue of the jam, so it is smart to apply warm up according to the situation.

Breakers might find it hard to have motivation to warm up. It depends how one see warm up. One will not have motivation for warm up if one see it as something you have to do without getting something out of it. By experiencing the benefits of proper and planned warm-up in your breaking and in one's body, opinion might change. Easy way is to try and find out, whether there is any effect on your training.

Finally the term warm-up itself might cause misunderstanding. The use of the term warm up separates automatically warm up and training. Forget the term warm up and think only the proper progression of the training. As a teacher stop talking about warm up and start training with moves which prepares the body to the following movement.

Longevity in breaking

Using warm up regularly won't be visible to outside so much in your 20 's, but the difference can be seen with older breakers. With older breakers there is a significant differences within the dance. Warm-up and taking care of your body have a big role in it. B-boy Storm is a good example how good breaking can be despite the age because he take care of his body so well.

It must be remembered that injuries are followed with more injuries. An injury leaves a mark forever and breakers must adapt to it. Because of the injuries one might need to change his or her way of breaking and even stop doing certain moves. So it is not the same how young breakers warm up and take care of their bodies even though they had not injuries yet.

6.2 How to perform warm up for breakers?

First of all, duration for warm-up should be 10-15 minutes. Performing warm-up efficient, 15 minutes is enough. After an efficient warm up body feels ready to break with full force. The idea is to start at the top with very basic and familiar movement and continue from there to more challenging movements on the floor. Warm-up should end with breaking related movement which already test the full movement patterns needed in your breaking later (see Figure 4).

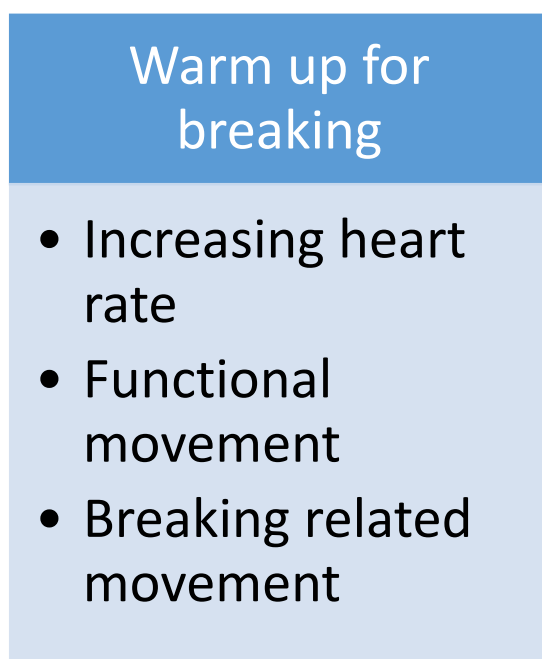


Figure 4. Warm up for breaking

1. Increasing heart rate

The goal of the first part is to increase heart rate with very basic movement safely. This can include different kind of jumping jacks, running, top rocks, jumping, etc. Like in every other part, it is recommend to start from the easiest and most simple movement. Intensity should grow gradually.

2. Functional movement

At the second part, the idea is to challenge the body on the floor level using all fours. Functional movement will activate the whole body utilizing different kinds of body-weight training moves, for example pushups and animal moves such as tiger, rabbit

and bear. In this section you can do part of the moves which you are planning to focus in your practice. Example if you are planning to practice six step (a footwork pattern) you can use the positions needed in six step in your warm up. This could mean choosing for example back position from six step and moving forward.

3. Breaking related moves

Last section of the warm up includes breaking related moves. The idea is to perform very basic breaking moves which are easy for the dancer. This section can include for example six step and sweeps. You can also do combinations, such as knee freeze - back sweep – baby freeze. In this section you can focus on your weak points, so eventually you will achieve more balanced body. You can use this part for mastering the basics. Start easily, but grow the intensity to the maximum. The goal is to have total certainty and confidence in that you can continue with full force and speed to more advanced training.

Example: Training a halo

Halo is a breaking move which belongs to power move category. Power moves require high level of coordination and control. Other power moves are for example back spin, head spin and windmill. Halo requires good control of basic freeze positions (stationary breaking move) and control of balancing only on your head. When breaking the move down you can add these parts to your warm up. At the second part you can focus strengthening your core and arms with versatile pushups. At the third part you can drill back sweep to baby freeze on both sides. After this, you can progress to back sweep to head swipe to baby freeze combination to both sides. Using these moves before your actual halo-practice as a warm up will get you faster to your goals and you will minimize injuries at the same time.

Every breaker is an individual, so breakers should find the best way for themselves. There is no single way of perfect warm up which suits for everybody. In order to develop it is important to update and make changes to it enough often. It is beneficial to perform warm up barefoot. With bare feet your ankles and knees get much more efficient training. In addition, it is beneficial to practice movement generally bare foot.

Mistakes in warm up

Warm up is basically simple to do, but there but following mistakes can occur while performing the warm up:

- Not listening the messages of the body
- Performing warm up sloppy
- Lack of concentration
- Doing something too much

First of all, it is important to listen what the body signals. Is there tiredness or even injuries? Noticing and reacting to these messages is crucial. On the other hand, you might notice that body might feel really good after the warm up, and it will give you confidence to your training. Another mistake is to perform warm up sloppy and not with full concentration. Being careless in your warm up will increase the risk of injuries. Finally, it is important to have balance with different parts and not do anything too much.

Warm up at competitions

Warm up at a competition can be performed with the same pattern used in the practice. Before competitions it is important to have the right feeling and confidence.

Warm up can be done already before you go to the venue, which makes it possible for you to start dancing right away when you hear DJ playing the music at the venue. This way you will have enough time to gather confidence by dancing. During dancing in the cyphers (circle of breakers where one dance on the middle) it is possible to apply the warm up pattern as follows:

1. Top rocks (Increasing the heart rate)
2. Go downs and footwork (Functional movement)
3. Complete solos (Breaking related movement)

Starting the solos with few top rocks (breaking on top) will get your heart rate up. Go downs (transition from top to floor) and footwork (breaking on the floor) will ensure

that your whole body is activated. In order to have full confidence in the session, finish with few complete solos. In order to save your energy to the competition, you want to keep your warm up short and not over 15 minutes. Dancing in the cyphers more than that will decrease your energy at the battles. Performing good warm-up at the beginning one does not need to do much before each round of the competition. Before each round few functional movement might be enough to ensure body is ready.

7 Conclusions

7.1 Key points of warm up

Breaking is considered as a potentially high-risk dancing sport. Severe injuries occurs yet breakers stop dancing for limited period of time. (Kauther et al. 2009). Warm up is in a major role of decreasing the risk of injuries. (Saari, et al. 2009, 4) Already preventing injuries could be enough motivating for performing warm up but there is a lot more than that.

Warm-up means part of practice, moves or move patterns which helps achieving the optimal physical condition for practice session or competition (Saari, et al. 2009, 3) Because of the increased body temperature the neural impulses start moving faster. This leads improvement of strength and proprioceptive system so speed, reaction time, balance and movement efficiency gets better as well. (Saari, et al. 2009, 4) The results included same theory and background of the warm-up.

The difference at the results and theory was seeing warm up as a scan for injuries. By performing throughout warm-up athlete will notice any injuries and can evaluate the overall condition of the day. Listening the body is important and confidence for training will go up if everything is working well. Additionally warm-up was seen as a transition to the training, where one already learn new skills and develop basic techniques.

According to Saari et al.(2009) it is important plan warm-up and consider athlete as an individual with general condition relate to age, training level, injuries etc. (Saari, et al. 2009, 5) Same points with individuality and planning came up at the results as well. Breakers tend to stick with their warm up routine and they don't change it enough often.

According to results breakers lack motivation for warm up because they don't see it as a productive part of training process. The term warm up could be even forgotten since it separates warm up and training. According Saari et al. different kind of warm up methods should try open minded. (Saari, et al. 2009, 5)

Optimal duration for warm up is hard to set because it depends about the individual preferences and goal of the training but it should last 15 minutes at least. (Saari, et al. 2009, 4,5) Results support this saying 15 minutes is enough if it is done efficiently. The previous key points from theory and results are presented in Figure 5.

Key points of warm up in breaking

- prepares body for optimal practice or competition condition
- Scanning the body for injuries
- Transition to the training
- Decrease risk of injuries significantly
- Planning and individuality
- 15 min or over

Figure 5. Key points of warm up in breaking

7.2 Warm up for breaking

Warm up pattern from results go together pretty well with the active warm up. Active warm up have more detailed parts. The first part is exactly the same on both. According to result second there is functional movement. Active warm up have functional mobility, core activation, lower limbs activation and reactive activation of the muscles. (Saari & et al. 2009, 5)

The last part of active warm up is the movement patterns. It is depended about the sport. The last part of breaking warm up is the breaking related movement so it matches which active warm up again. Three steps formula could be easier to remember if you remember include to your second part all the different elements. Six different phases is a bit harder to remember.

Active Warm Up	Warm Up for Breaking
<ul style="list-style-type: none">• Breathing and blood circulation• Functional mobility• Core activation• Lower limbs activation• Reactive activation of the muscles• Movement patterns	<ul style="list-style-type: none">• Increasing heart rate• Functional Movement• Breaking realated moves

Figure 6. Active warm up (Saari & et al. 2009) and warm up for breaking

The most common injuries are occurred to back, fingers, wrists, hands, knee, shoulder and knee. (Kauther et al. 2009, Cho et al. 2009) This fact is important keep in mind when performing the warm-up. Specific warm up exercise for these areas can be performed after the increasing heart rate so wrist and fingers are warmed-up before going to the floor (see Figure 7). For making the pattern more easy to remember functional movement phase can been seen as a bigger package including activating core, lower limbs, reactivity and mobility. Performing the warm up routine you will achieve optimal breaking condition and you only need 15 minutes.

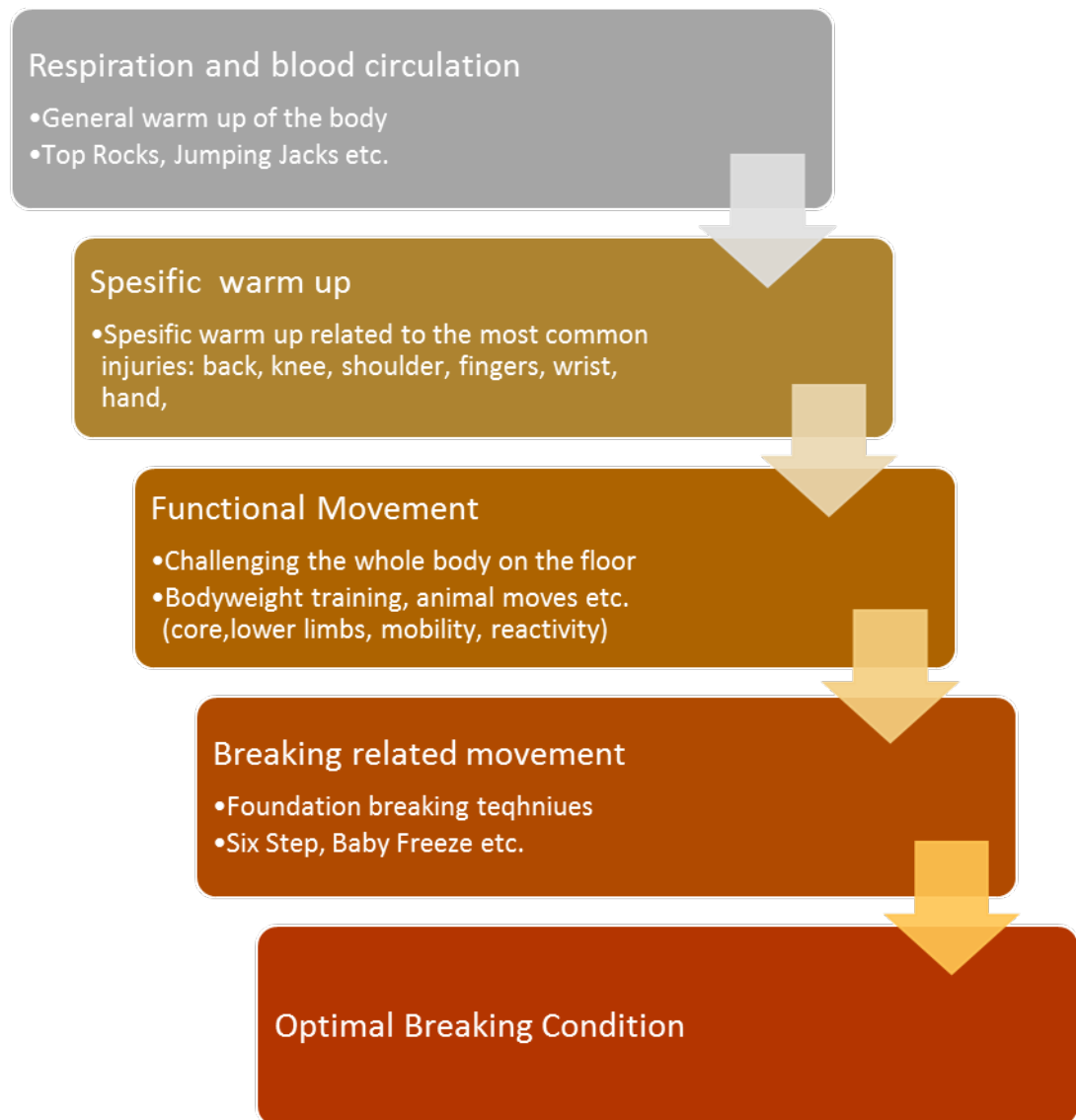


Figure 7. Warm up for optimal breaking condition

It is important to consider athlete as an individual with general condition relate to age, training level, injuries etc. When goal of the training is to increase mobility, mobility training is done already at the warm-up. (Saari et al. 2009, 5) Same kind of points came up from the results. Due to results you can have different warm up in your training and jams or competitions.

8 Discussion

With interviewing only one person for my study, generalizing my results is limited. There are thousands of breakers around the world, and everybody has their own way

of training. In breaking and hip hop culture generally, originality is a big value. So everybody goes their own way. In that way, breaking is a very far from other sports where practice methods are clearer globally. Luckily the purpose of this thesis was not to find the perfect warm up pattern for everybody, but to search information and go to a little bit deeper level. Theory and previous studies was limited at this research, which is part related to the fact that there is limited amount of research made from breaking.

Yet, I am satisfied with the outcome of this thesis. I was planning to interview more people for this thesis. I realized my own resources and the fact that it is better to focus on one person who could have the best knowledge. Afterwards I feel pleased with the outcome. My vision was to deepen my own knowledge and give something concrete to the breaking world, and I believe that many can benefit from this. The data from the interview proved good because there were similarities with the theory as well as some new approaches.

Another minor challenge at this process was the language. I choose to do my thesis in English even though it would have been much easier in my mother tongue Finnish. Especially challenging was to write with scientific style and translate terms related to research methods from Finnish to English. Decision was made due the fact breaking community in Finland is not huge, and I want to share my results with breakers all around the world. With this in mind, English was the best language.

Making this research was rewarding because breaking has been a big part of my life over ten years, and now I could combine my studies with breaking. This thesis gave me a huge amount of inspiration to continue specializing in breaking. During my studies many of my breaking friends have showed support for me to combine breaking and physiotherapy. I believe this research can be utilize by physiotherapist who work with breakers.

As a continuation for this research I will use these results as a foundation for a video guide about warm up in breaking. In this video my goal is to focus more on the practical level and teach the actual warm up. This research gave me a lot of information

and motivation for making the video guide. Breaking requires more data on how it should be performed properly and safely. Proper syllabus for breaking could help. Syllabus could include warm up and injury prevention aspects. At the moment, syllabus for street dances is being planned in Finland.

Focus for next research could be the relation with this warm up pattern and injuries in breaking. Would injuries decrease and what other benefits could be found? In addition the usability could be one aspect of the research.

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Appendices

Appendix 1. Interview Questions

Interview questions

1. Background

- Name, age, city
- Breaking history
- Profession
- Coaching background

1. Warm-up in breaking

Why breakers should warm up?

- What is warm up?
- Warm up and injuries
- Does breakers warm up enough?
- Does warm up belong to breaking and why it feels so hard to do?

How to do proper warm up for breakers?

- What kind of moves should be included?
- Proper duration?
- How to combine warm up to breaking?
- How to warm up before competitions?
- Possible mistakes?

Appendix 2.

Permission letter

Permission letter

Jamk University of Applied Sciences
Social, Health and Sport
Degree Programme in Physiotherapy

Warm Up in Breaking
Semi-structured interview
Bachelor`s thesis
Matti Pulkkinen

I have been asked to be interviewed for this study. I give my permission to use the results of the interview at the bachelor thesis.

Date

Signature

Johannes Hattunen